20H0E0 E58280DT

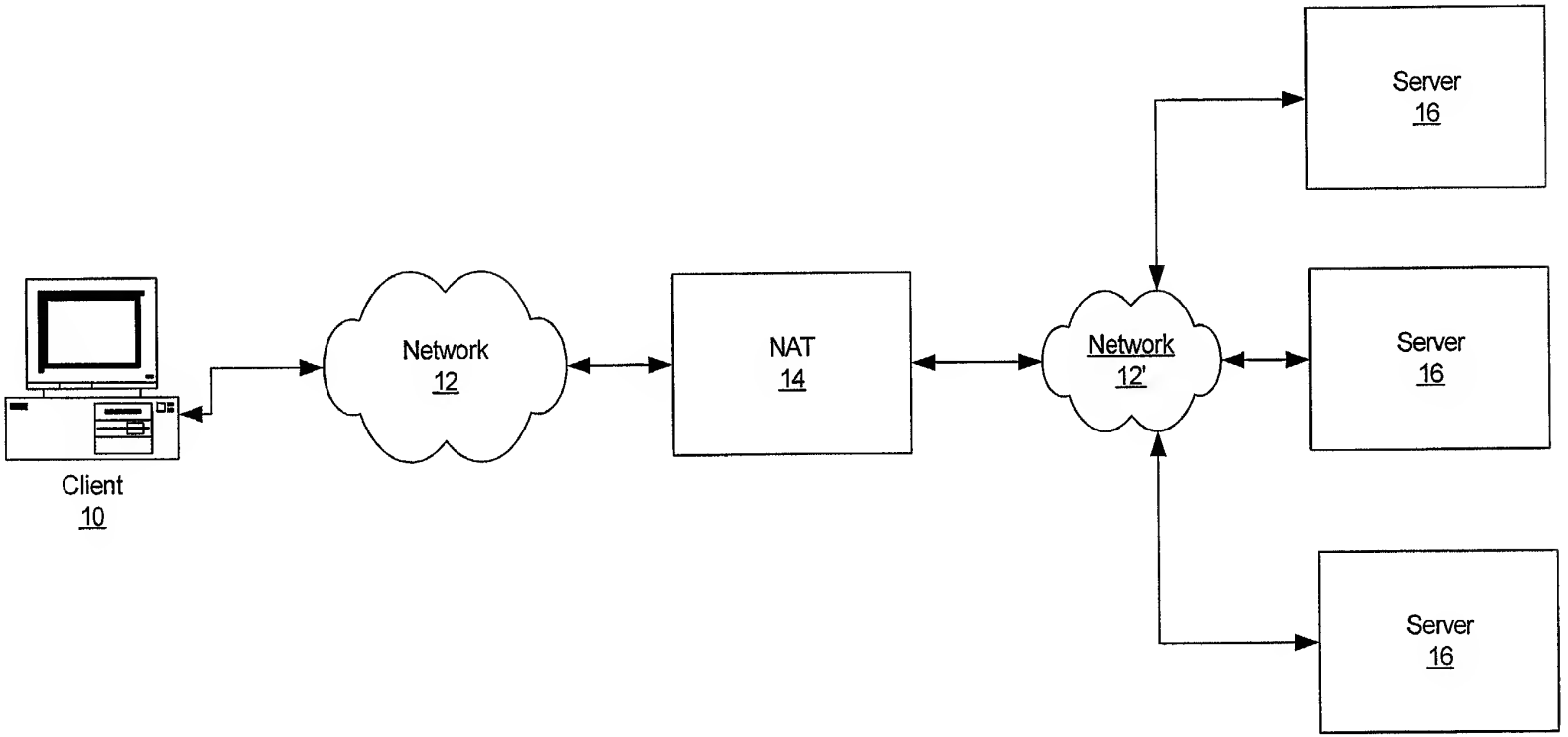


Figure 1

20020627.ES8

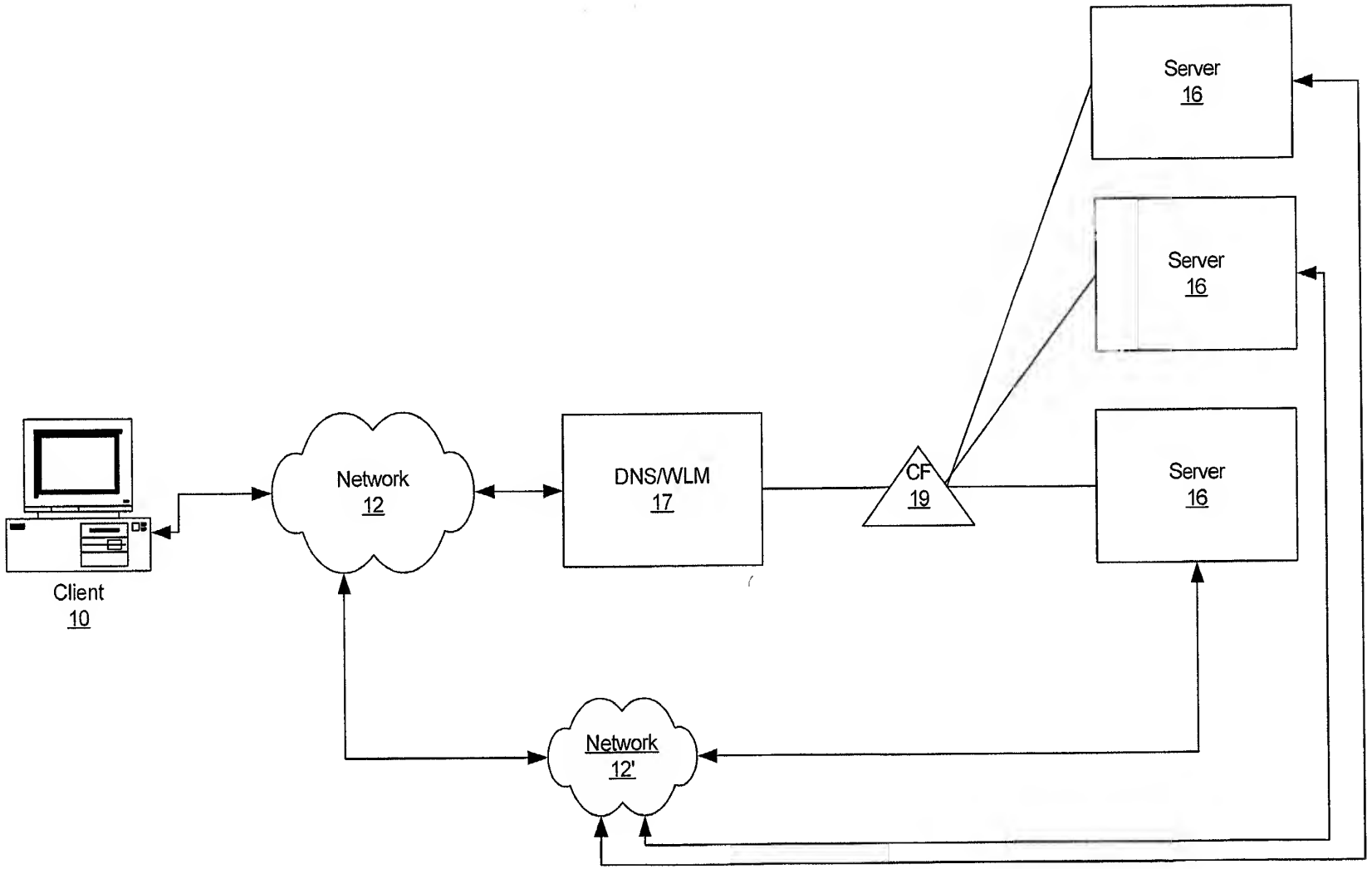


Figure 2

AMENDED SHEET

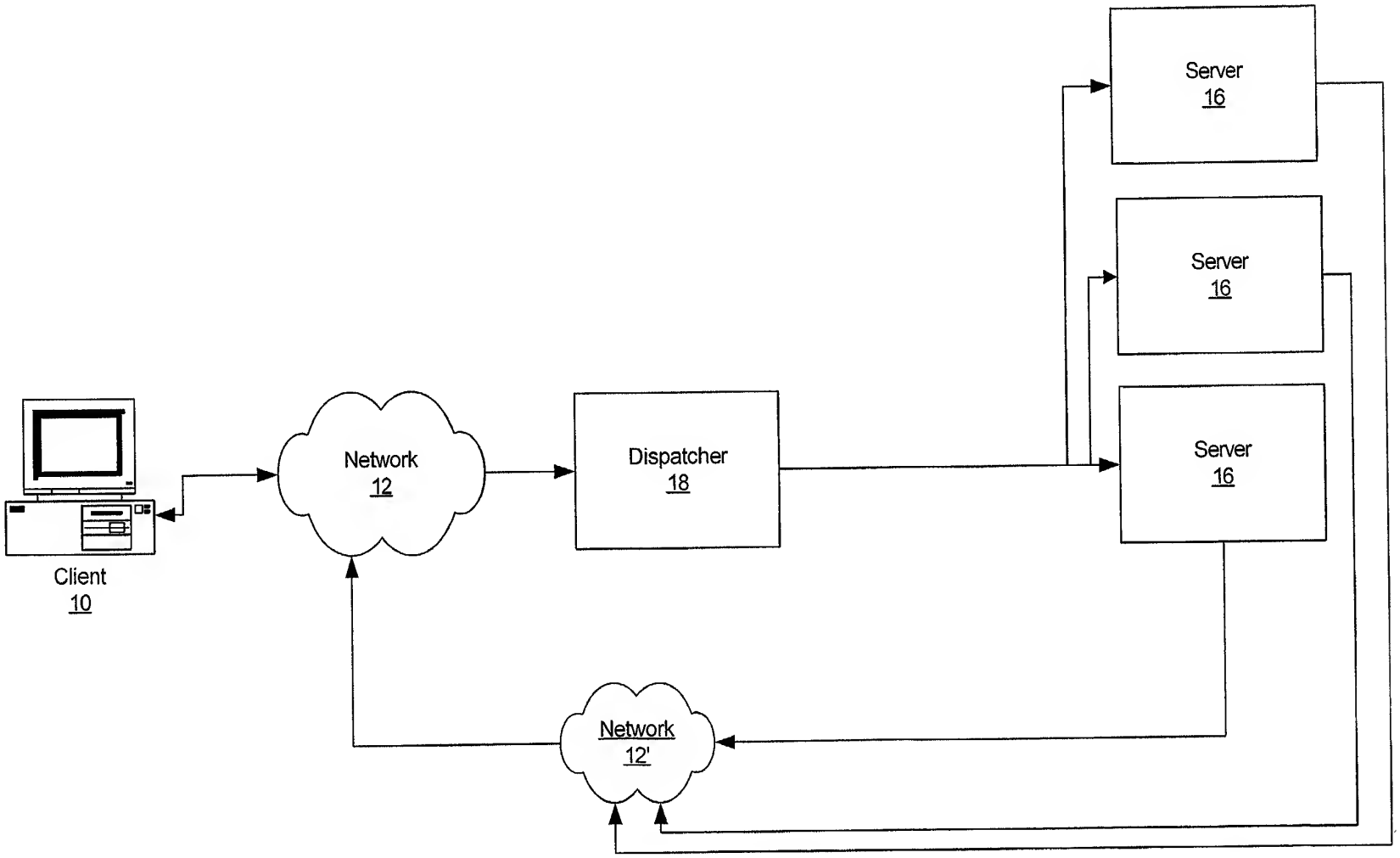


Figure 3

20060258907

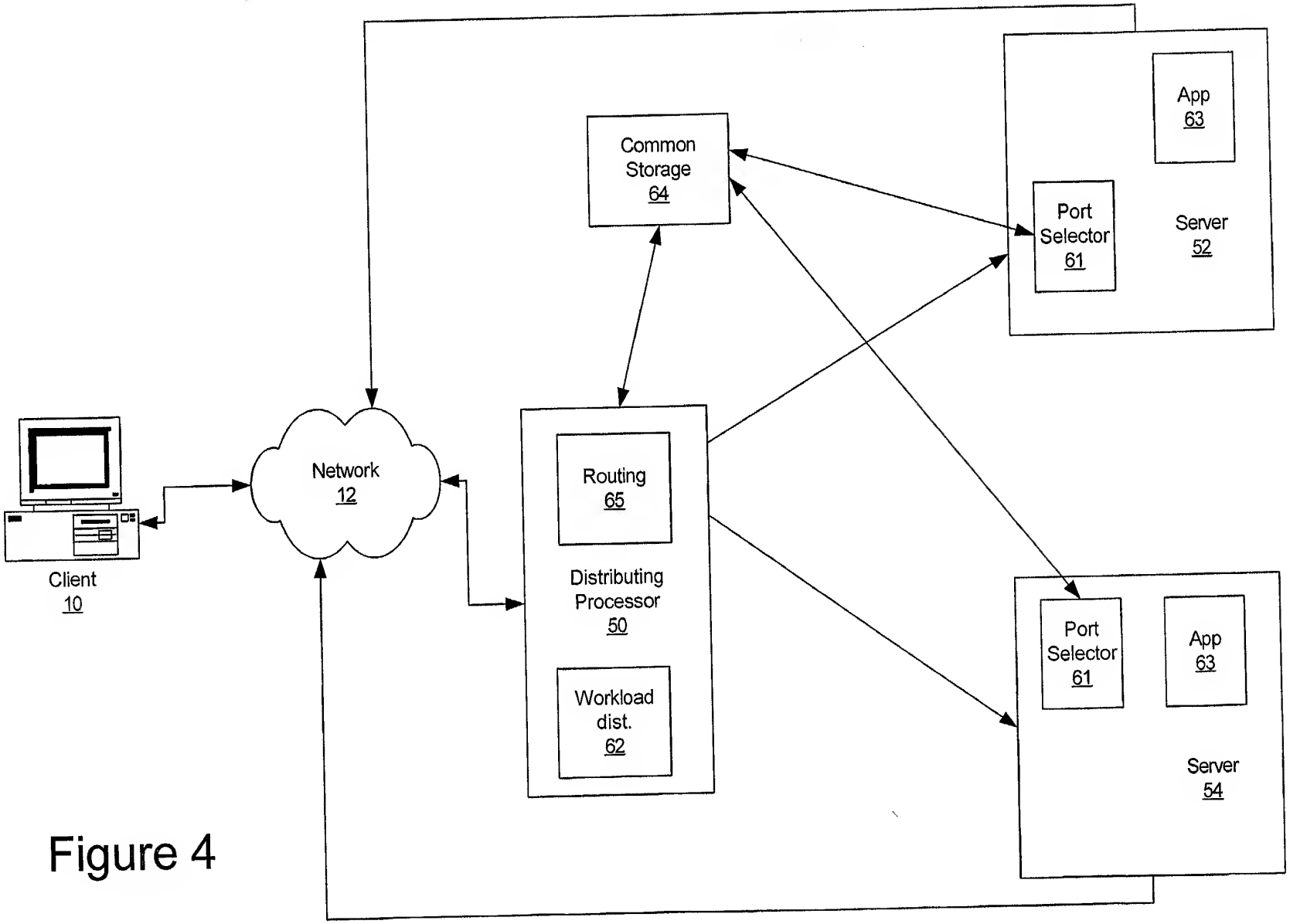
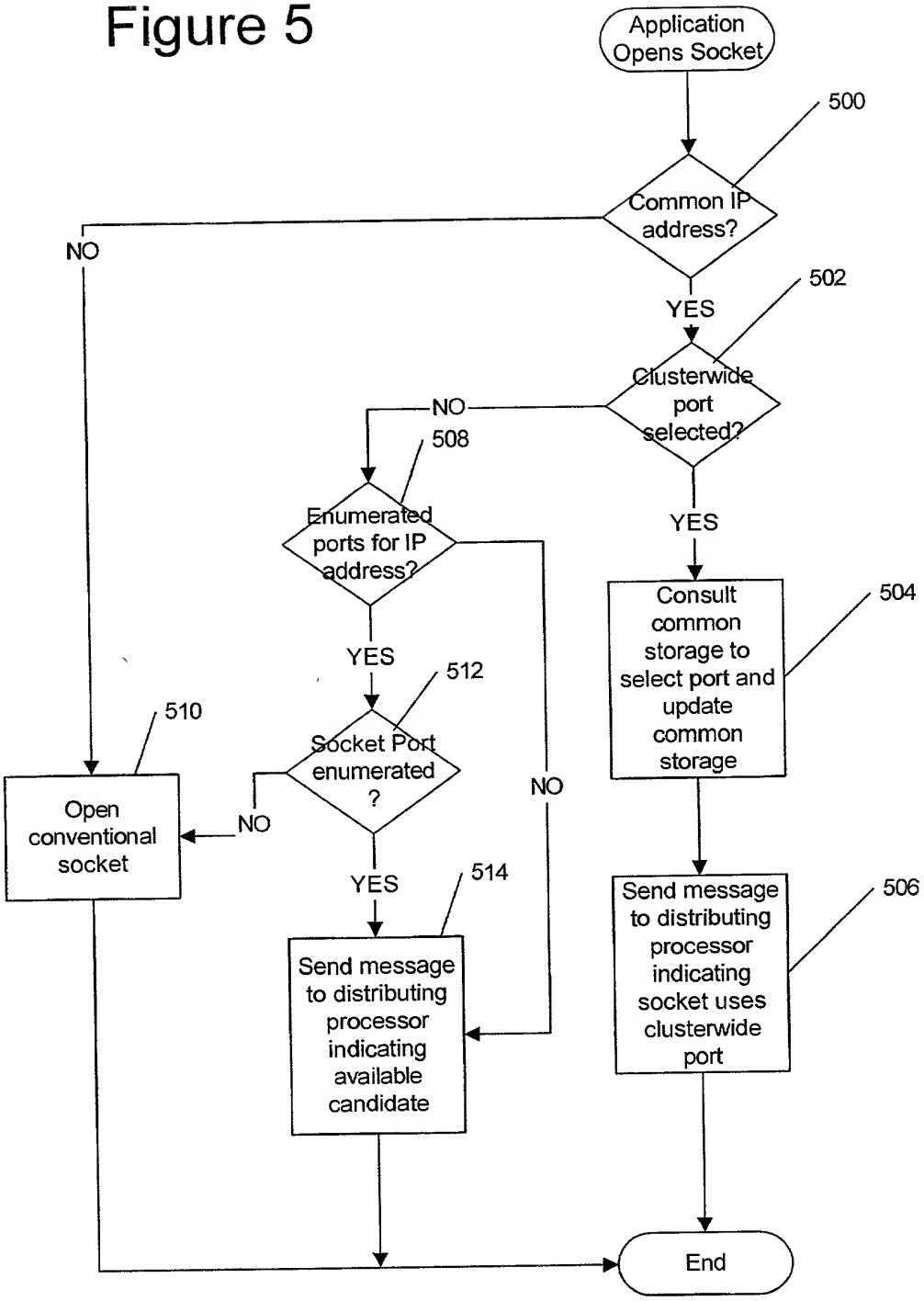


Figure 4

Figure 5


Application Opens Socket
500
Common IP address?
NO
YES
502
Clusterwide port selected?
NO
YES
508
Enumerated ports for IP address?
YES
NO
512
Socket Port enumerated ?
NO
YES
510
Open conventional socket
514
Send message to distributing processor indicating available candidate
Consult common storage to select port and update common storage
504
Send message to distributing processor indicating socket uses clusterwide port
506
End

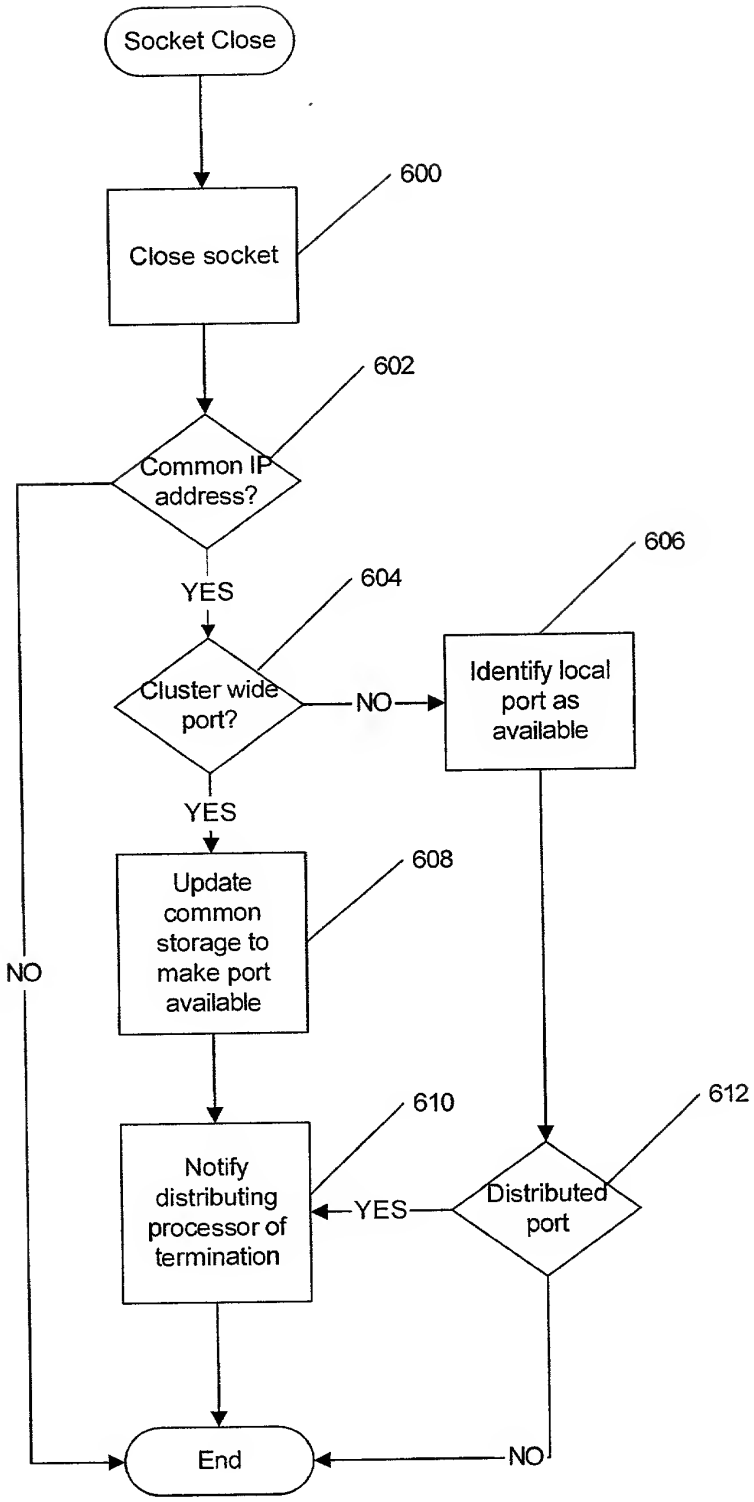

Socket Close
600
Close socket
602
Common IP address?
YES
NO
604
Cluster wide port?
NO
606
Identify local port as available
YES
608
Update common storage to make port available
610
Notify distributing processor of termination
YES
612
Distributed port
NO
End

Figure 6

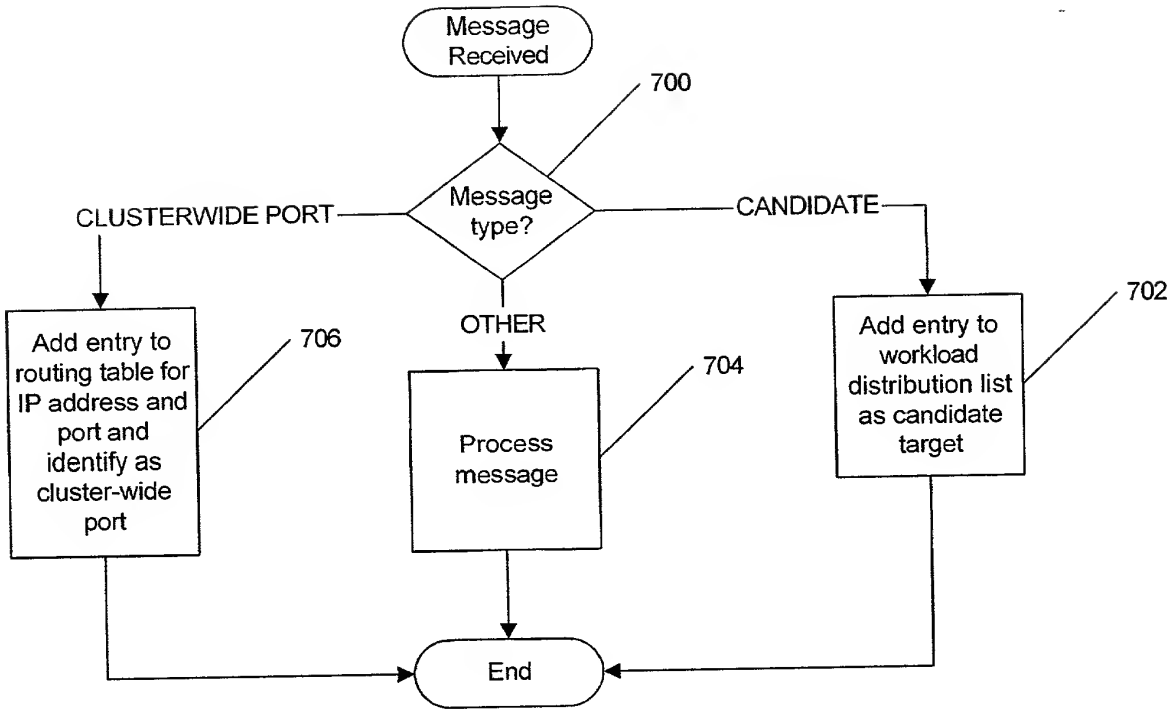

Message Received
700
Message type?
CLUSTERWIDE PORT
CANDIDATE
OTHER
Add entry to routing table for IP address and port and identify as cluster-wide port
706
Process message
704
Add entry to workload distribution list as candidate target
702
End

Figure 7

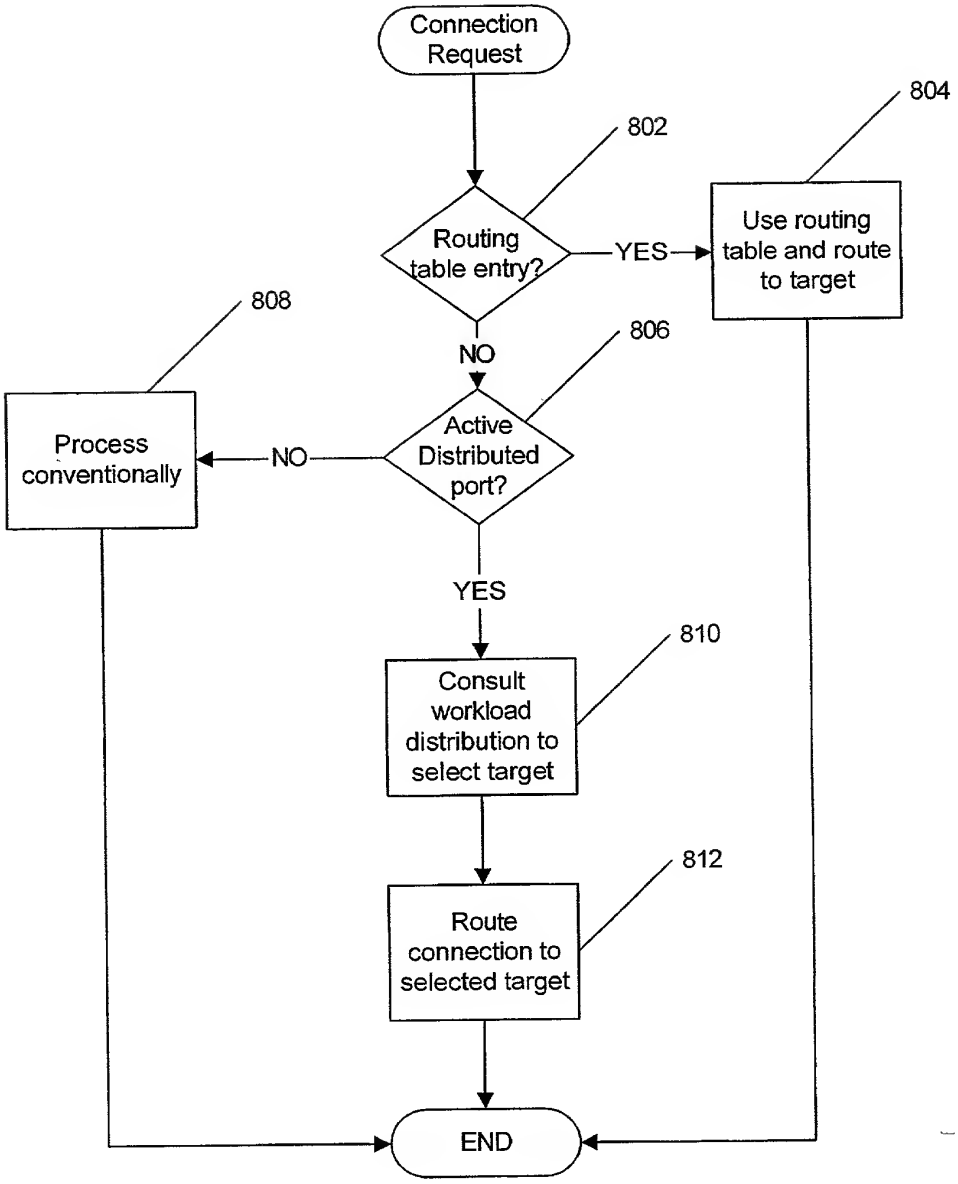

Connection Request
802
804
Routing table entry?
YES
Use routing table and route to target
808
806
NO
Process conventionally
NO
Active Distributed port?
YES
810
Consult workload distribution to select target
812
Route connection to selected target
END

Figure 8

Approved for Release

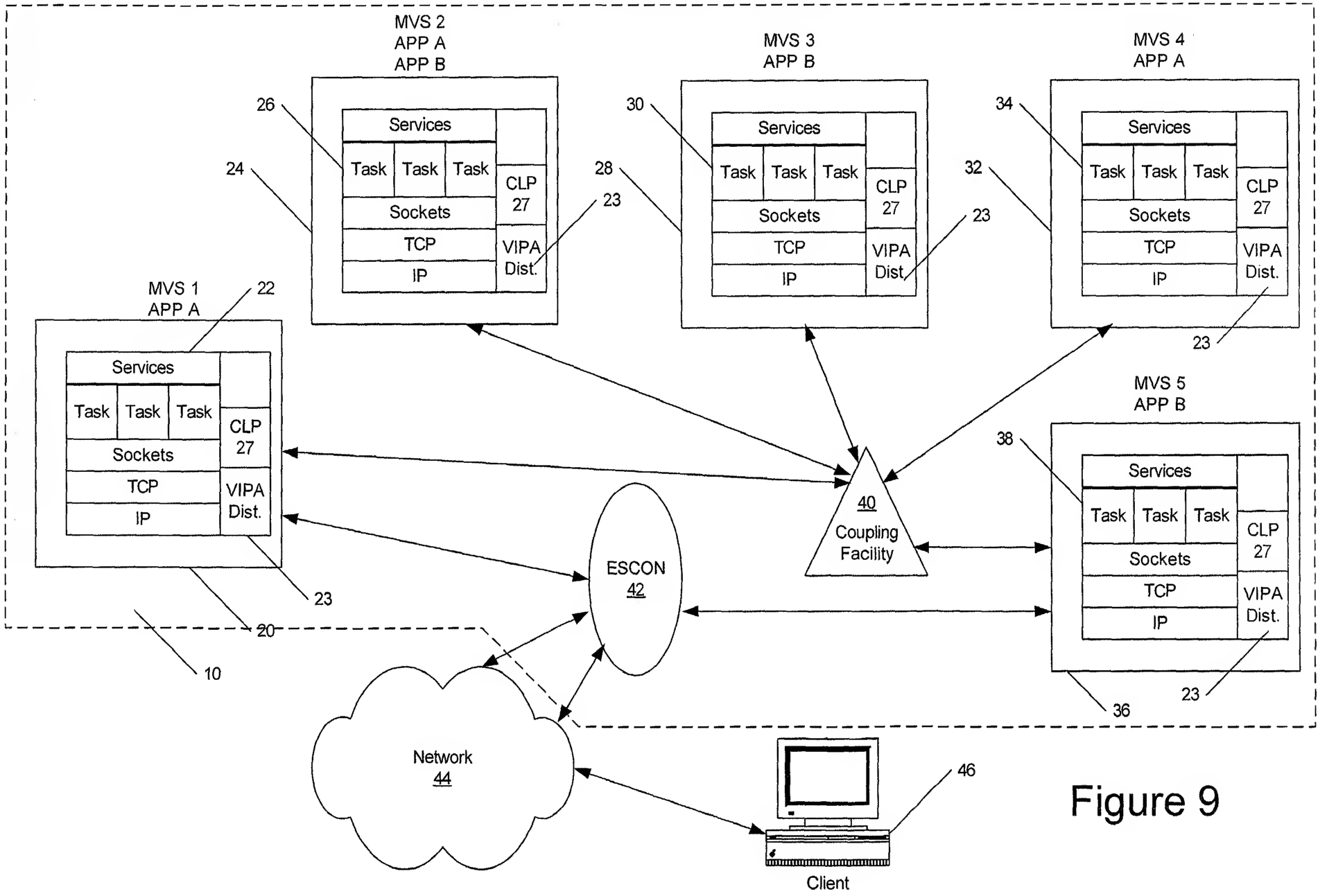


Figure 9

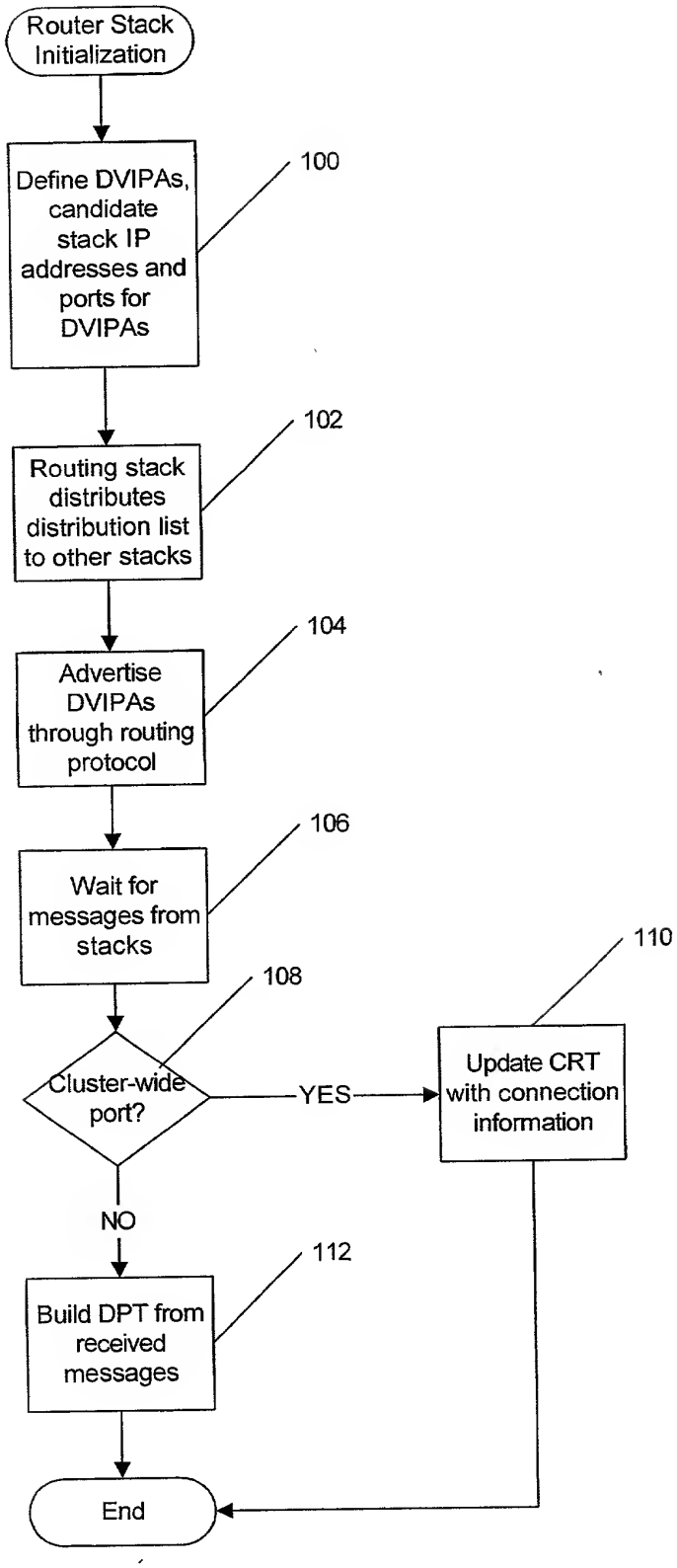
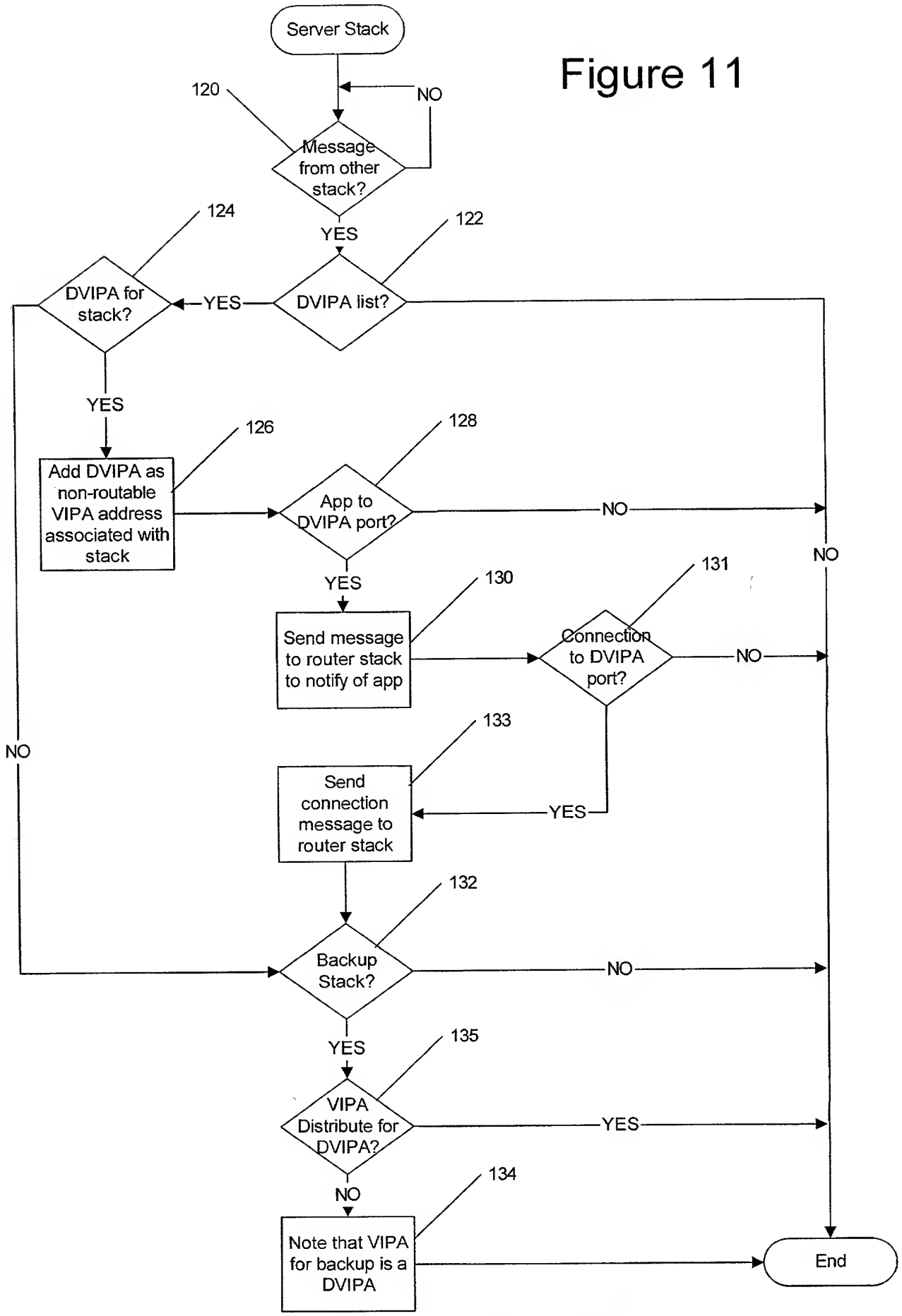

Router Stack Initialization
Define DVIPAs, candidate stack IP addresses and ports for DVIPAs
100
Routing stack distributes distribution list to other stacks
102
Advertise DVIPAs through routing protocol
104
Wait for messages from stacks
106
Cluster-wide port?
108
YES
Update CRT with connection information
110
NO
Build DPT from received messages
112
End

Figure 10

Figure 11


Server Stack
120
NO
Message from other stack?
YES
124
122
DVIPA for stack?
YES
DVIPA list?
YES
126
128
Add DVIPA as non-routable VIPA address associated with stack
App to DVIPA port?
NO
NO
YES
130
131
Send message to router stack to notify of app
Connection to DVIPA port?
NO
133
NO
Send connection message to router stack
YES
132
Backup Stack?
NO
YES
135
VIPA Distribute for DVIPA?
YES
NO
134
Note that VIPA for backup is a DVIPA
End

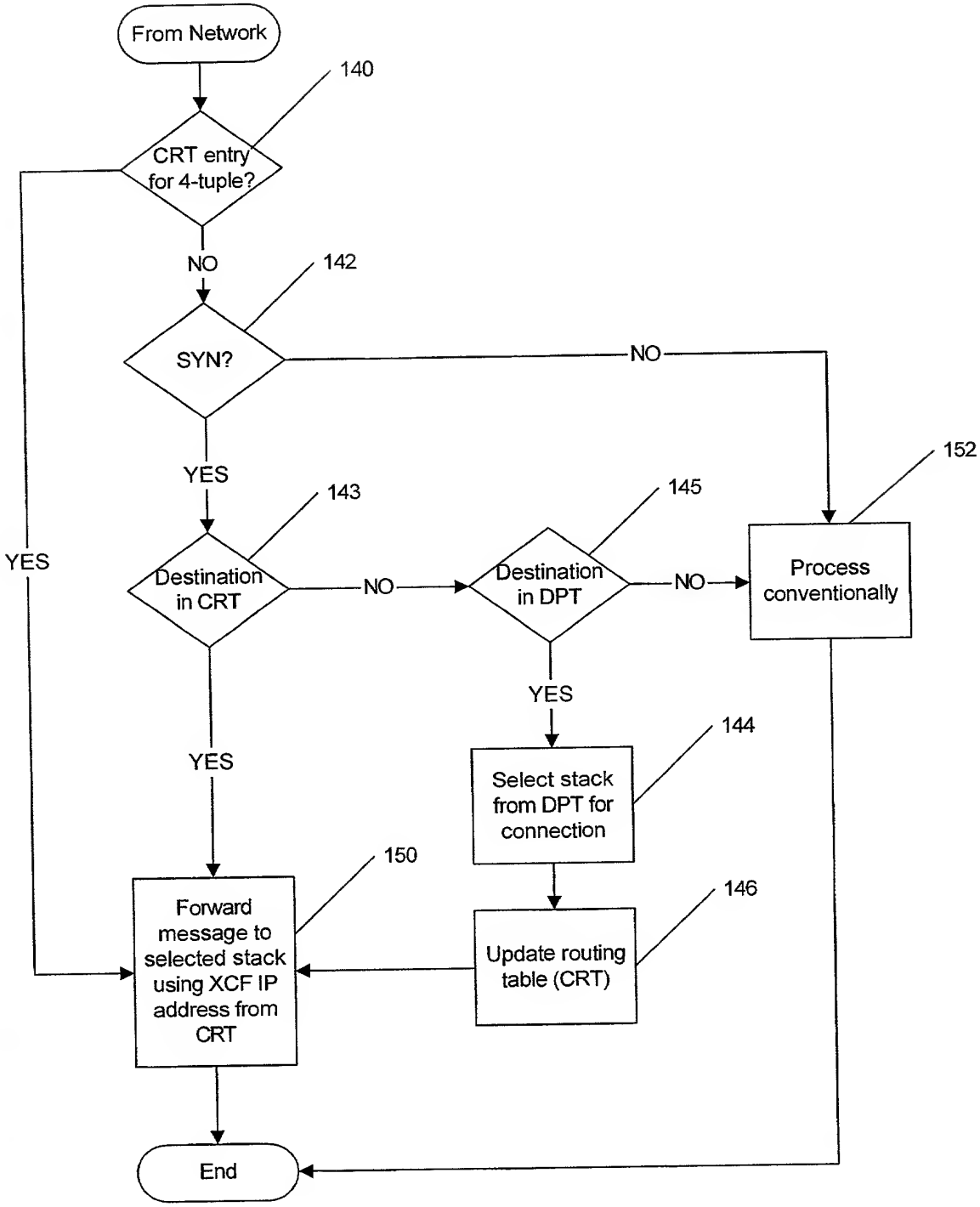

From Network
140
CRT entry for 4-tuple?
NO
142
SYN?
NO
YES
152
143
145
YES
Destination in CRT
NO
Destination in DPT
NO
Process conventionally
YES
YES
144
Select stack from DPT for connection
150
146
Forward message to selected stack using XCF IP address from CRT
Update routing table (CRT)
End

Figure 12

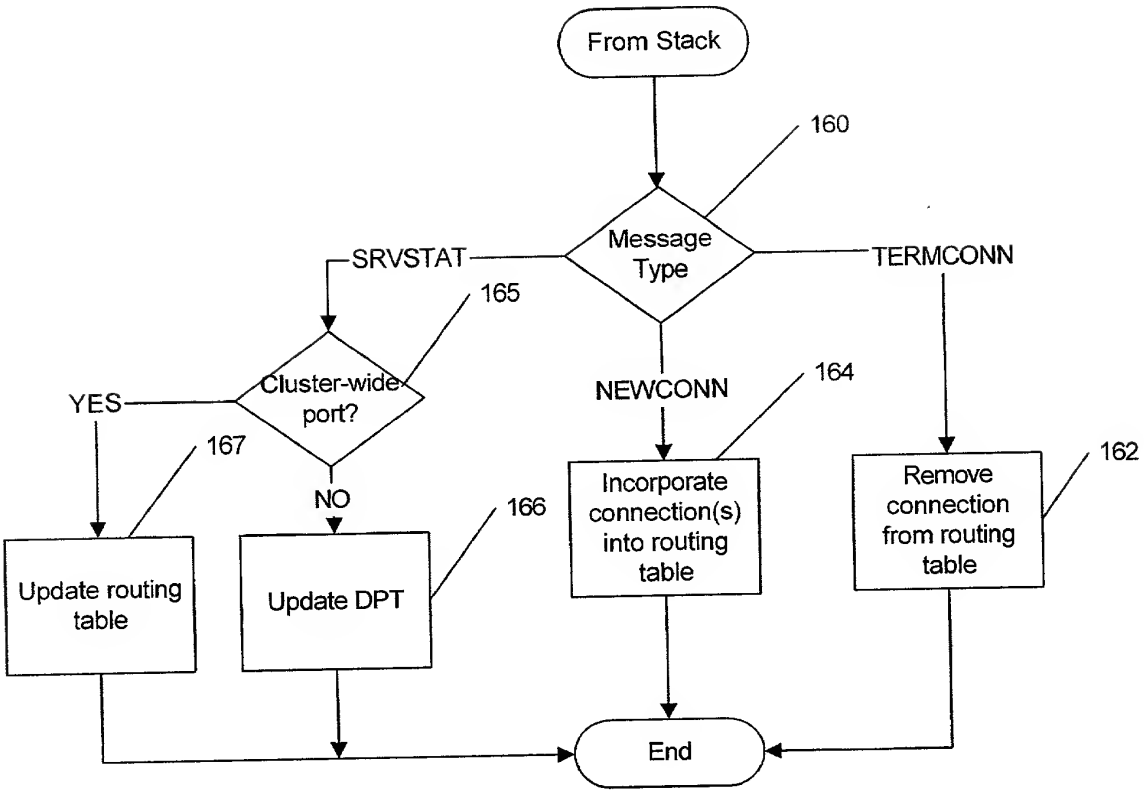

From Stack
160
Message Type
SRVSTAT
TERMCONN
NEWCONN
164
165
Cluster-wide port?
YES
NO
167
166
162
Update routing table
Update DPT
Incorporate connection(s) into routing table
Remove connection from routing table
End

Figure 13

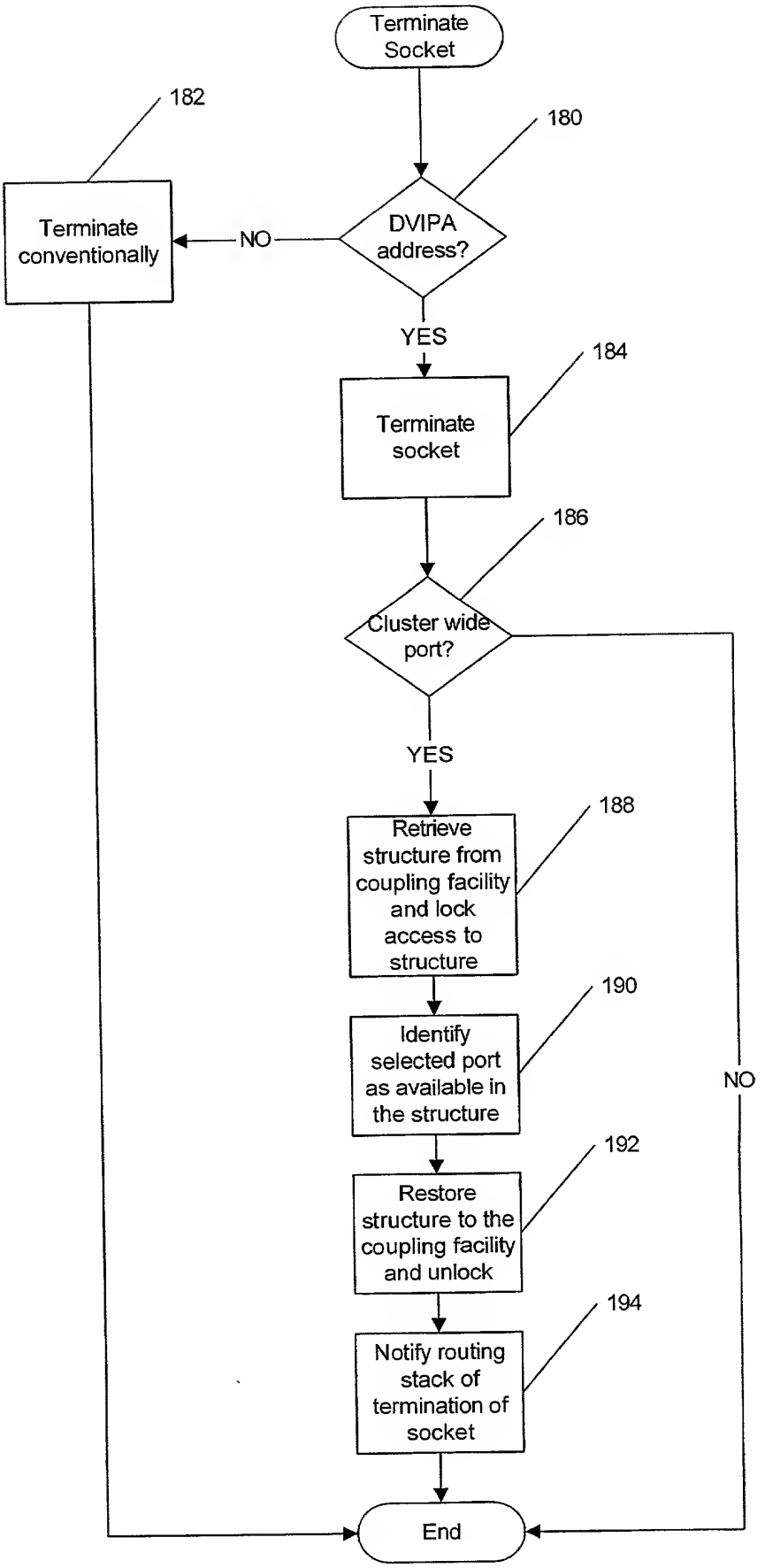

Terminate Socket
180
DVIPA address?
NO
182
Terminate conventionally
YES
184
Terminate socket
186
Cluster wide port?
YES
NO
188
Retrieve structure from coupling facility and lock access to structure
190
Identify selected port as available in the structure
192
Restore structure to the coupling facility and unlock
194
Notify routing stack of termination of socket
End

Figure 14

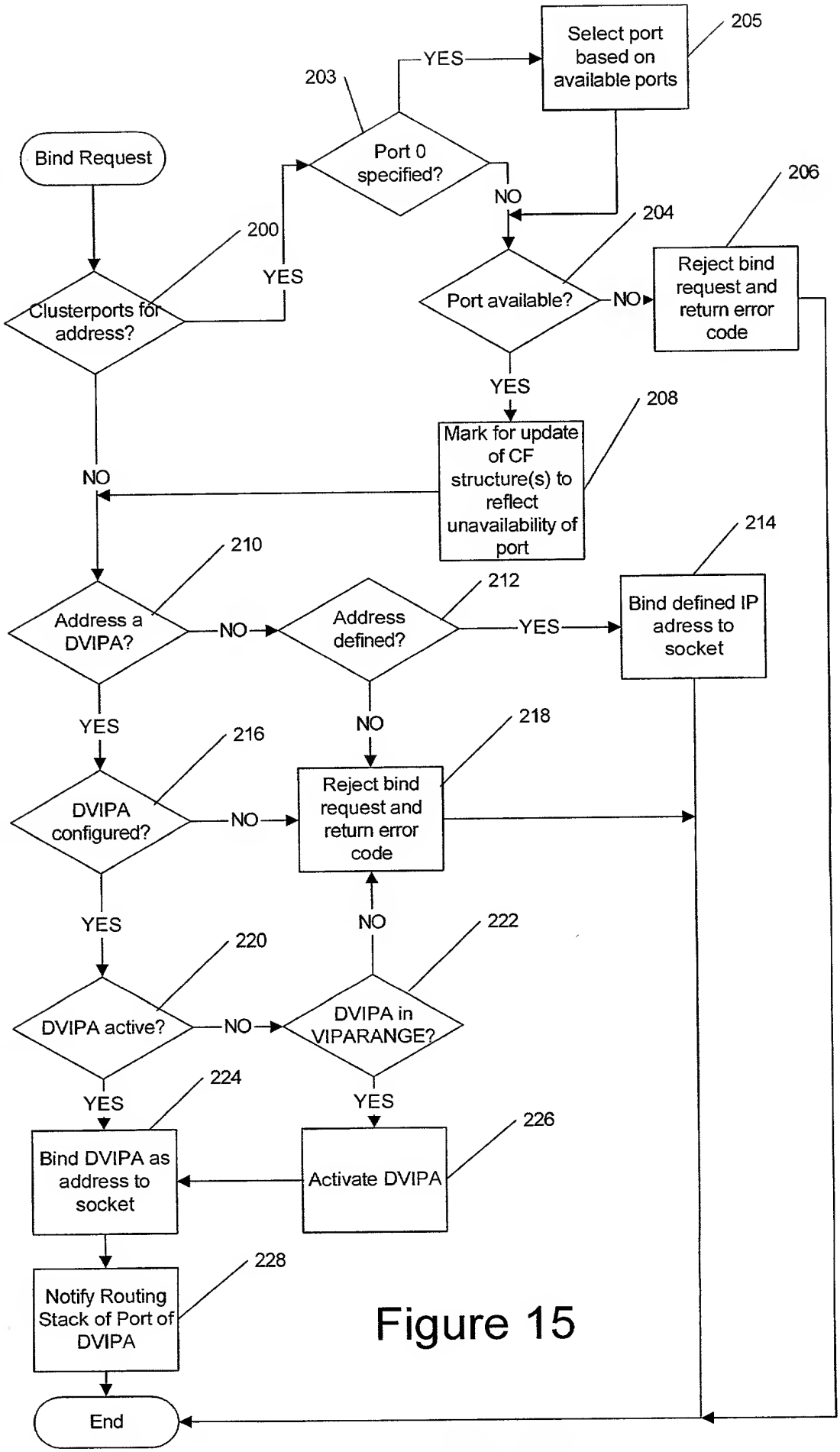

Bind Request
Clusterports for address?
200
YES
Port 0 specified?
203
YES
Select port based on available ports
205
NO
Port available?
204
NO
Reject bind request and return error code
206
YES
Mark for update of CF structure(s) to reflect unavailability of port
208
NO
Address a DVIPA?
210
NO
Address defined?
212
YES
Bind defined IP adress to socket
214
YES
NO
DVIPA configured?
216
NO
Reject bind request and return error code
218
YES
NO
DVIPA active?
220
NO
DVIPA in VIPARANGE?
222
YES
YES
Bind DVIPA as address to socket
224
Activate DVIPA
226
Notify Routing Stack of Port of DVIPA
228
End

Figure 15